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THE Journal of Home Economics

For those interested in Homemaking, Institution Management, and Educational Work in Home Economics

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"VOLUNTEER WAR GARDEN ARMY"

In his letter, which follows, the President approves the design of Secretary Lane to arouse the school children of the United States to "as real and patriotic an effort as the building of ships or the firing of cannon:"

MY DEAR MR. SECRETARY:

I sincerely hope that you may be successful through the Bureau of Education in arousing the interest of teachers and children in the schools of the United States in the cultivation of home gardens. Every boy and girl who really sees what the home garden may mean will, I am sure, enter into the purpose with high spirits, because I am sure they would all like to feel that they are in fact fighting in France by joining the home garden army. They know that America has undertaken to send meat and flour and wheat and other foods for the support of the soldiers who are doing the fighting, for the men and women who are making the munitions, and for the boys and girls of Western Europe, and that we must also feed ourselves while we are carrying on this war. The movement to establish gardens, therefore, and to have the children work in them is just as real and patriotic an effort as the building of ships or the firing of cannon. I hope that this spring every school will have a regiment in the Volunteer War Garden Army.

Cordially and sincerely yours,

(SIGNED) WOODROW WILSON.

Hon. Franklin K. Lane,
Secretary of the Interior.

THE
Journal of Home Economics

VOL. X MAY, 1918 No. 5

WHAT TO TEACH THE PUBLIC REGARDING FOOD VALUES[1]

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During the last few years considerable progress has been made in the study of nutrition. It is important at this time that we should meet to discuss the question of whether or not we can introduce with profit some of the newer ideas to practical every day living. We have undertaken, as a phase of the work of the Food Administration, a campaign for the education of the people generally in the fundamentals of nutrition, which is without parallel, and it is important that the subject be presented in the best possible way. With a view to aiding in the solution of this problem, I want to suggest a new method of presentation of the subject matter now available in this field.

The learners in the present campaign are, of course, nearly all women. They may be divided into two groups. The first group is composed of highly intelligent women, who are, if they have leisure, leaders in the improvement of conditions in their communities. These women are, in many instances, not only able and anxious to learn what is the best practice in the selection of foods and their preparation, but want to know the reason for what they learn to do. These women should be taught what they want to know, and they should be made sources of authority to others in their neighborhood. The problem of equipping them not only with subject matter but with a method of adapting this to presentation to the second group is a very vital one.

The second group consists of women who are not capable of making application of abstract knowledge of food values to their own dietaries,

[1] Presented at the Tenth Annual Meeting of the American Home Economics Association, Atlantic City, March 1, 1918.

but need to be told concretely what to do. In their instruction the "reason why" when useful at all serves merely to lend vividness and dignity to the arbitrary dictum of what to do, and cannot be relied upon to furnish a basis for independent applications.

It is the first group of women that the Food Administration aims to reach through the conservation courses now being instituted everywhere in colleges. Through them, mainly, the second group will be reached. The effectiveness of the instruction of this second group, who constitute the largest factor in the actual saving of certain foods, will depend in large measure upon the point of view imparted to the leaders in the conservation classes. It is among these, after all, that the keenest necessity for knowledge exists, in order that they may properly plan dietaries for those for whom they purvey.

I would not suggest an abandonment of the classification of foods on the basis of chemical composition. We must have a language of nutrition, and must use the terms protein, carbohydrate, fat, and mineral elements, as we have been doing. Students should be taught which foods are low and which are high in protein, and should become familiar with the approximate amount of available energy of each of the different types of foods. I have thought a great deal about the possibility of formulating ten or twelve commandments of nutrition, which, if committed to memory and obeyed in the selection of food, would make the body a restful abode for the soul. One cannot hope now to formulate such knowledge as is desirable in a form which could possibly remain long without need of revision, for the subject of nutrition is still a growing one; yet, I am tempted to undertake to offer a few generalizations which will help to guide in the proper selection of food. Before stating these, I want to briefly call attention to several matters which should occupy the attention of teachers of the science of nutrition.

One of the outstanding results of modern research in nutrition is the great differences in the biological values of the proteins from different sources. In a general way this fact is appreciated by nearly all teachers of today, but many are still in need of clearer distinctions regarding what data in the literature is capable of direct application to practical nutrition, and what is of such a nature that it cannot be so applied. No lack of appreciation of the data of the latter type is intended, for it may have, and frequently has, a value of the first importance to the investigator in this field. As an example may be cited the laborious studies through which the amino-acids became known, and the data

yielded by such methods of analysis of the proteins as those of Fischer and Van Slyke. Important as these results are in making possible further progress, they are not of such a nature that they apply, as they have been frequently applied, to deductions concerning comparative food values. It is through these results that we have arrived at a valid working hypothesis concerning the nature of the proteins, and have been able to appreciate why the proteins are not all of equal value. It is, however, but a fraction of the total number of the amino-acids of proteins that can be determined by these methods in a manner approximating a quantitative way. An attempt to utilize the figures for the yields of this or that amino-acid by this or that protein as evidence of the comparative values of the proteins themselves, or the food-stuffs from which they are derived, will lead to entirely fallacious deductions.

Such data for example as are tabulated in the literature for the yields of the different amino-acids, make the pea and bean proteins appear superior to those of wheat and corn kernels. Chemical analysis has indicated that the proteins of the pea and bean are not one-sided in composition with respect to any amino-acid which can be determined at all satisfactorily, and there are none of the essential ones absent entirely. In fact, there seem to be such proportions among them as would indicate relatively high values for these proteins and would seem to justify the characterization of these legume seeds as "the poor man's meat." Properly planned feeding experiments were performed to determine what is the lowest plane of intake of certain proteins which just suffices to maintain a rat without loss of body weight. When the protein was derived solely from these four seeds singly, with the diet otherwise satisfactorily constituted, the surprising fact was shown that the pea and navy bean proteins have but about half the biological value of those of the cereal grains. It requires about 6 per cent of wheat or corn proteins to maintain an animal in body weight, whereas 11 to 12 per cent of either navy bean or pea proteins are necessary for this purpose. We have been inclined to place too much confidence in the results of chemical analysis of foods. We must rely more upon the biological method. The latter is, however, not without its pit-falls.

The great danger in the use of data obtained by biological methods, as distinguished from that of chemical methods, lies in judging which experiments are so planned and controlled as to yield results which are satisfactory. It would be out of place at this time to attempt to point

out specific instances where data which, on appearance in print appeared to be of extraordinary interest, and seemed to establish new view points, but were later shown to be of little value because the plan of the experiment was faulty or inadequate in its scope.

A note of warning should be sounded against an over enthusiastic and indiscriminate application of certain types of experimental data from feeding experiments with restricted dietaries, especially where children are concerned. I have in mind particularly the type of experiment in which there is a "diet squad," living for a brief period on rations which may be entirely inadequate in their make-up for the maintenance of health over a long period. They may not be, however, of such a character as to influence the well-being of vigorous men or women in the prime of life, especially when the experiments are of but short duration. The deductions from such data are of no value, and may be pernicious when interpreted to apply to the solution of problems relating to the nutrition of the child.

In some measure the same caution applies to such admirably controlled experiments as have been recently described, in which it appeared that the nitrogen of the potato is of extraordinary food value. Results which have recently been obtained in my laboratory, in which the nitrogen of the potato served as the sole source of this element, and the diets were satisfactorily constituted in all other respects, and the element of growth or maintenance over a long period was involved, have demonstrated to our satisfaction that the nitrogen of the potato is of decidedly lower biological value than that of the cereal grains, oats, wheat, and corn. Students and teachers who are not themselves closely in touch with the experimental procedure, are liable to underestimate the danger of error in accepting the results of short experiments. They should fully appreciate that it is not safe, with such data as a basis for deductions, to make recommendations concerning comparable dietaries for consumption over a long period of time. Such deductions have not infrequently been made, even when the claims of the author as to the scope of application of his data were properly qualified. Some short experiments are of great value. It is a fairly common practice in many institutions where nutrition is being taught, or dietary problems studied, to have groups of students keep records over a period of a week or more of their nitrogen intake and output. Such experiments have a real educational value, just as has all elementary experimental work, but not infrequently

the most unjustifiable deductions concerning the adequacy of the diet are drawn from such data. The mistake lies in leaving the student with the idea that the results are of greater practical value than they really are. The problem for which there is no easy solution, is that of acquiring judgment as to the worth of different experimental data. It must be admitted that intelligence, interest and wide reading will not assure the acquisition of such judgment. It is to be gained only by actual experience with the experimental method of study, coupled with an amount of critical reflection on the data of others, which will tax the strength of the most vigorous and courageous.

In order to appreciate why it is desirable, for purposes of instruction, to adopt a grouping of the natural foods based upon their special dietary properties as shown by an elaborate system of feeding experiments, it is necessary to fully understand some of the newer viewpoints brought out by the more recent researches in nutrition. The importance of protein has been in the past emphasized to a degree which minimized the importance of all other factors in the diet except energy value. It is now clear that the composition and amount of the mineral constituents of the food is a matter of very great importance, and that variety and wholesomeness in the food supply does not at all assure that this part of the diet will be satisfactorily constituted.

Aside from energy, protein, and inorganic factors, a diet, to be adequate, must contain two substances, the chemical natures of which are as yet unknown. To these I have given the names fat-soluble A and water-soluble B. When the diet is satisfactory, except that it lacks the fat-soluble A in sufficient amount, animals develop a peculiar edematous condition of the eyes and soon become blind. The addition of the missing dietary essential leads to their prompt recovery. This eye trouble is a type of xerophthalmia. The fat-soluble A is found most abundantly in butter-fat, milk, and egg yolk, and to a lesser extent in the leaves of plants. It also is found to some extent in seeds, but is in most seeds in too small amount to supply the needs of a growing animal. Such foods as are derived from the endosperm of the seeds do not contain this substance. It is not found in any vegetable fats or oils. Muscle tissue and the body fats contain very little of this substance but the glandular organs contain more of it. The water-soluble B is present in abundance in all natural foods except those derived from the endosperm of the seed, e.g., bolted flour, degerminated cornmeal, polished

rice, starch, sugars, and fats and oils of both animal and vegetable origin. When the diet lacks this substance, but may be otherwise adequate, experimental beri-beri characterized by paralysis results.

There are certain general statements which can now be made concerning the dietary properties of the several classes of natural food-stuffs, which seem to me to greatly simplify the problem of instructing students in the wise selection of foods and in making such combinations as will assure a safe diet. In so far as the peculiar qualities of the natural foods have been determined with certainty, it is presented in the following summarized form. All students should be thoroughly impressed with the following facts:—

1. That food-stuffs may be logically classified into groups which possess special properties, and that certain combinations of these, though their composition as shown by chemical analysis may appear good, do not give satisfactory results in the nutrition of man and animals. In fact, the recent work in the study of nutrition has made possible the introduction of a new feature in discussing the properties of foods on the basis of the data obtained by the biological method, i.e., their properties as revealed by properly planned feeding trials.

2. It may now be considered definitely established that it is not possible to secure adequate human nutrition with diets derived solely from seeds, no matter how complex the mixture; nor with combinations of seeds with meat; nor with seeds and tubers. All these types of mixtures of sound and wholesome food-stuffs fail to maintain the highest bodily efficiency, resistance to disease, and capacity to produce and rear young.

3. The reasons man and animals do not thrive on a diet derived entirely from seeds are found (a) in the relatively low inorganic content, their deficiencies in this respect being limited to the elements sodium, chlorine, and calcium, and possibly to a slight degree, iron also; (b) in the relatively poor biological value of their proteins; and (c) on the low content of the unidentified dietary essential, fat-soluble A. The seeds fail to supply enough of this substance to support normal well-being over a prolonged period.

A young animal fed on any one of the ordinary seeds such as wheat, oats, rye, barley, peas, beans, hemp seed, millet seed, fails to grow. It will likewise fail to grow on a mixture of a seed with a purified protein such as casein; or of seed with such a salt mixture as makes good all the deficiencies of its inorganic content. A small amount of growth may be

obtained on such seed and salt mixtures in a few cases, but it fails to induce even half the normal amount of growth, and reproduction will be wanting and the span of life very brief. With mixtures of seed and a growth promoting fat, such as butter fat, there is no growth whatever.

When two purified food additions such as protein and salts, protein and a growth-promoting fat, or a salt mixture and a growth-promoting fat are added to a seed, growth is secured in those cases only in which one of the additions is a salt mixture. Even with these, there will be practically no reproduction, and the span of life will be short—about a third or less of the normal life period of the well fed animal in the case of the rat. With three purified food additions—protein, salts, and a growth-promoting fat—the cereal grains are so supplemented as to be complete from the dietary standpoint.

Since the seeds are all constituted on the same general plan, it follows that it should be impossible to secure adequate nutrition with any mixture of seeds, and numerous trials have shown that this is the case. The protein factor in mixtures of seeds may be of very satisfactory quality in some cases, so that with certain seed mixtures the dietary deficiencies are reduced to two, viz., the inorganic content and the content of the fat-soluble A.

4. There are two classes of foods, milk and leafy vegetables, which should be designated as *protecting foods*, because they are so constituted as to make good the dietary deficiencies of the seeds and tubers which nevertheless must always remain our principal sources of energy and an important source of our protein and inorganic salt supply. Milk and the leafy vegetables have a value which cannot be expressed in terms of energy or of protein. They are *protecting foods* not because they furnish elements of mystery which are not to be had in other foods, but because they correct the faulty composition of the seeds and tubers and the seed products in respect to protein, inorganic salts, and the fat-soluble A.

5. While it is a mistake to derive the diet too largely from the seeds of plants, such as wheat, oats, corn, rye, barley, kaffir, peas, beans, peanuts, it is a still greater mistake to derive the diet too largely from products prepared from the endosperm of the seeds. In this group are bolted flour, degerminated cornmeal, polished rice, (rice which has been deprived of its germ and bran), starch, sugars, and syrups. Such a list of foods will not maintain health, even when supplemented with

fairly liberal amounts of meat and fats. This is the type of diet which is being employed in certain parts of the South at the present time, especially in those parts where pellagra is prevalent, and is without doubt a predisposing factor in the causation of the disease. This conclusion is supported by the demonstration of Goldberger, that the disease yields fairly readily to suitable dietetic measures. The use of liberal amounts of tubers such as potatoes and sweet potatoes will not safeguard the health of the people living on such a diet. It is likewise not easy for them to eat a sufficient amount of the leafy vegetables to correct the faults in such a diet. The use of liberal amounts of milk is the most important change which could possibly be made in those regions where pellagra is common. Meat does not take the place of milk in the diet.

6. The use of milk is the greatest factor of safety in our diet. We have been deriving from dairy products in the past about 18 per cent of our food supply, the same is true of the leading nations of Europe, but some of them, as the Swiss, have used much more milk than we have. Do not attempt to compare the cost of milk with that of other foods. It is also starting from a wrong premise to compare the cost of wheat, corn, oat and rice products, with that of leafy vegetables, such as cabbage, cauliflower, Swiss chard, collards, Brussels sprouts, lettuce, celery, spinach, and onions. Look upon these as *protective foods* and eat of them liberally. They should not be considered foods of low value because they contain much water and but little protein, fats, or digestible carbohydrates. What they possess of the energy yielding foods and proteins are good, but they stand in a class by themselves among the vegetable food-stuffs in the character and amount of their mineral content (in dry leaves from three to six times that of the seeds), and in their content of the unidentified dietary essential, fat-soluble A. In a general way they supplement the seeds and tubers.

7. There has during the last six years been a popular belief in the existence of a number of substances to which Funk gave the name of "vitamines," and concerning which there is at present much misconception. It has been proposed, without anything like adequate experimental evidence, that there is a considerable number of such substances, each serving by its presence in the diet, to protect against a certain type of malnutrition, such as beri-beri, scurvy, pellagra, and rickets. Some have likewise postulated the existence of still other substances of unknown chemical nature, which are essential for growth as contrasted with maintenance.

Recent experimental work by the writer and his associates has established the fact that there are in reality but two such unidentified chemical substances which are physiologically indispensable. These we call fat-soluble A and water-soluble B. This has been shown by two lines of evidence: First, chemical evidence on the basis of solubility which is fairly convincing that we are dealing in water-soluble B with but a single physiologically indispensable substance. The probability is very small that there should be several substances, all of which are about equally soluble in certain solvents, and equally insoluble in another series. We have recently discussed this point at length.

Second, We feel convinced that scurvy and pellagra are not diseases due to lack of "vitamines" in the diet. They follow the long continued use of faulty diets, but the cause is of an entirely different nature from that responsible for beri-beri or the xerophthalmia of dietary origin. These two latter pathological states are in reality each the result of the absence or lack of a sufficient amount of a specific chemical substance which the normal diet should supply. Beri-beri does not occur in the United States. This shows that with respect to this dietary factor there is no problem in this country, even in those sections where diets are of the poorest quality. Xerophthalmia of dietary origin is very rare, a fact which would lead to the conclusion that there is no "vitamine" problem in human nutrition in this country. We have, however abundant experimental data which demonstrate that diets derived exclusively from cereal grains furnish less of this substance than is needed to induce the best results in the nutrition of animals. There can be no doubt that in certain districts in the United States at the present time, diets are relatively common which would be enhanced by the inclusion of foods (milk, eggs, and leaves) which would increase the content of fat-soluble A in the diet. These foods would, of course, likewise serve to improve the diet in other respects.

From what has been said it will be evident that the popular belief in the need of care to take special foods "rich in vitamines" of numerous kinds has crowded out of consideration the real and pressing problem of practical nutrition. There is no danger that we shall suffer from lack of the anti-beri-beri substance, water-soluble B, unless we shall limit our food supply almost entirely to articles derived from the endosperm of seeds, products such as bolted flour, degerminated corn meal, polished rice, starch, sugars, and vegetable fats. If the diet should be so re-

stricted we should be in jeopardy fully as much because of the poor quality of the proteins of the food, and its poor inorganic content, and the lack of the dietary essential fat-soluble A, as from the factor first mentioned. There is some danger that with diets restricted to seeds, meats, and tubers, we shall obtain less of the fat-soluble A than is necessary for the promotion of the optimum physiological well-being. The "vitamine" problem is, however, much simpler than has been generally believed.

It is highly desirable that we should discuss the chemically unidentified constituents of the diet in terms no more extravagant than are employed for the other indispensable constituents of the normal diet. We should cease to use such expressions as "substances vitally necessary for health and growth;" "growth promoting substances," when we employ no such terms with regard to dietary factors such as calcium or other mineral element. The latter forms a problem of some gravity in the selection of foods, and is indeed fully as important as is the problem of securing sufficient "vitamines."

The results of experimental feeding reveal the natural foods in a new light and warrant their classification on the basis of function rather than of chemical composition. This is well illustrated by the pronounced differences in the dietary properties of the leaf of the plant as contrasted with the seed. The reason for this is found in the difference in the function of these parts of the plant.

The seed consists of a tiny germ composed mainly of cells and a large endosperm which is principally a package of reserve food materials, and is comparable to a mixture of purified proteins, starch, sugars, fats, and inorganic salts. There are, of course, some cells in the endosperm through whose functioning the reserve food materials are deposited so as to form the peculiar structures seen in the seeds, but in a general way the seed as a whole is relatively much reserve food, and relatively little cellular material.

The leaf, on the other hand, is the laboratory of the plant in which are built up proteins, carbohydrates, and fats. While there are some leaves which serve as storage organs, and are gorged with reserve food-stuffs, the typical leaf is on both its surfaces a mosaic of actively functioning cells and the dry leaf is much more rich in cellular materials than is the dry seed. The two unidentified food essentials, fat-soluble A and water-soluble B, appear to be associated with the cell and not with the reserve

food-stuffs, and are accordingly more abundant in certain types of leaves than in seeds.

The germ or cellular portion of the seed is richer in mineral elements, and in the dietary factors A and B, than is the endosperm, especially that part which appears in bolted flour, degerminated corn meal, and polished rice. Furthermore, the proteins derived from the germ are symmetrically constituted in that they yield all the amino-acids of "complete" proteins and none in excessively great or small amounts. The dietary properties of the germ are, therefore, very different from the endosperm and resemble those of the leaf.

The tubers such as the potato and sweet potato, and the root crops, such as beets, turnips, radishes, are storage organs and, so far as they have been studied, tend to have dietary properties similar to the seeds rather than to the leaves of the plant.

It should be emphasized, however, that there are some variations in the dietary properties of different seeds. These depend upon the relative amount of the germ and the cellular elements just beneath the bran layer and in the endosperm on the one hand ,and the amount of reserve food on the other. Doubtless very appreciable differences will be observed between the dietary properties of roots and tubers depending upon whether or not the skins, which are rich in cellular material, are eaten. Variation is likewise seen in the special value of leaves. In fleshy leaves like the cabbage, the leaf is specialized in some degree to act as a storage organ for starch, sugars, etc. Other leaves contain a delicate skeletal framework with little reserve food substances. In this class are the thin leaves which dry quickly when the plant is cut.

A similar contrast is seen between the dietary properties of the muscle tissue (steak, ham, chops) of an animal as compared with the glandular organs (liver, kidney, sweetbreads). The former are highly specialized contractile tissue, and are comparable with the seeds, especially in respect to the character and amount of the mineral elements, the content of fat-soluble A and water-soluble B. The latter are organs rich in cells and accordingly fall into the same general class as the leaves in their quality as food-stuffs. The character of the inorganic content of the glandular organs is not so satisfactory for making good the deficiencies of seeds as is the inorganic content of leaves.

While the classification on the biological basis cannot with safety be pushed to an extreme, *the dietary properties of the food-stuffs can be predicted in a general way from the function of the product used as food.* While

products having the same function may properly be compared with each other on the basis of chemical composition, tissues of either animal or plant origin which are rich in cellular structures cannot with safety be compared from the dietary standpoint with storage tissues. This classification of the food-stuffs on the basis of function, with emphasis on the fact that most of the food-stuffs have deficiencies which are corrected by milk and the leafy vegetables, should form the main thesis of the teacher of nutrition and dietetics. As the other subject matter of the course is presented these facts should again and again be reiterated.

From what has been said it will be appreciated that while variety tends to make in some degree for safety, the idea that a varied diet will necessarily promote health has in the past been accepted with too much confidence. The diet will be inadequate even if it is made up of a half dozen kinds of seeds such as the cereal grains together with the legume seeds and potatoes or other tuber or root foods, even when these are supplemented with moderate amounts of meats, and small amounts of the leafy vegetables. I do not mean to say that such a diet as that last described will lead to complete failure within a short time. Human experience teaches the contrary. What I wish to emphasize is that such a diet will not permit the most satisfactory development, nor will it promote health, resistance to diseases, or efficiency and longevity in the same degree as a diet containing liberal amounts of milk and leafy vegetables.

Two facts stand out with great prominence, viz., the paramount importance of milk as a regular constituent of the diet, and the great value of the leafy vegetables. If everyone in the United States could be taught that these two classes of foods are *protective* in character, in that they correct the faults in any other foods which we are likely to consume, and that it is a duty to include a fairly liberal amount of each of these in the diet each day, the benefit which would come from such a knowledge would be greater even than that derived from the knowledge we now possess concerning immunization against diseases. Everyone should be taught that it is a mistake to buy any meat until each member of the family has a pint of milk each day.

AMERICANISM THE SPIRIT OF COSTUME DESIGN[1]

ETHELWYN MILLER

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Americanism is the keynote of the fashions of 1918. Up to the present time the designers of women's wear (by women's wear we mean hats, gloves, lingerie, shoes, and dresses—in fact, all of women's wearing apparel), have had for their source of inspiration the products of the Parisian designers' creative ability. Our designers have gone to Paris to get their ideas for the general form and for the accessories of costume. Not only have they gone to France for the style, as we call it, but they have gone for the design of the fabric itself. Our ribbons and silks, our velvets and woolen materials, all have been designed by the Parisian schools; and we in America have imported for our most exclusive, highest priced models, the Parisian designs.

Two years ago, with the beginning of the war, there sprang into existence in this country the first design contest for women's wear. That fact is a significant one because never had there been held in America a design contest for women's wear. This contest was held at the Art Alliance of America, in New York City, through the inspiration of M. C. A. Crawford, a Research Assistant in Textiles at the Natural History Museum, and was promoted by the newspaper called *Woman's Wear*. This newspaper, published in New York City, gives a daily report of industrial conditions underlying the making of textiles, shoes, and all sorts of woman's apparel.

This contest was open to professional artists, amateurs, and school children; and it is interesting to note that at the second contest, which was held this fall, there were 283 contestants ranging from eighty years of age to children of the fifth grade from the Paterson, New Jersey, schools. It is also interesting to note that two of the children from the public schools had their designs purchased by Marshall Field & Company to be used in manufacturing ribbons.

Along with this contest which was held at the Art Alliance was a second type of contest, called the Albert Blum Contest for Hand-Decorated Fabrics. This was the first time in America that a design contest had ever been held by a manufacturer. The principal types of

[1] Presented at the Tenth Annual Meeting of the American Home Economics Association, Atlantic City, March, 1918.

hand decoration for fabrics are the wax resist process called batik, the tie and dye process, block printing, embroidering, stenciling, and weaving. The batik and the block printing processes are being widely used, as may be seen by watching the fashion magazines and the newspapers.

These two types of contest, one promoted by a newspaper and the other by a manufacturer, both put emphasis upon design *created in America*, and inspired by the study of primitive American designs. "American" includes Mexican, Central American, and South American.

Many designs which are being printed on the cloth for women's garments are taken from Mexican baskets and Mexican pottery. The Museum of Natural History in New York City has sent one of its members to Central America to study the primitive designs of that country. In this fact we note a change in custom; instead of going to Paris to study design, our designers are beginning to go to Central America, South America, or Mexico, and they study in the Museum of Natural History the Indian baskets, Indian pottery, and Indian printing designs. The source of inspiration of design is *primitive American art.*

A third type of design contest is represented by the Wanamaker's Store Art Exhibit. The present contest is the sixth yearly one for their New York store. It is the twelfth contest for the Philadelphia store. It is open to school children between four and fifteen years of age in the public and private schools. Three thousand two hundred awards have been made in the last contest for originals, copies, and posters. The prizes are of various types. One of the prizes which seemed very much worth while was the loan of an exhibit of paintings from the Wanamaker Galleries to the school which received the most prizes in its exhibit. These paintings were hung in the school where the children might see them; and it is said that it awakened a great deal of interest in good paintings in the neighborhood where the school was located.

Wanamakers in the first years of their contests hung the prize winning pieces in the art galleries in their store, and the crowd of admiring friends and relatives was so great that they had to discontinue the practice. However, the fact that a big store like Wanamaker's thought it worth while to give prizes for public school art stimulated the public in general to recognize the value of the art of the public schools. It is a very significant fact that the stores are coöperating with the public schools in establishing standards for judging the worth of a commercial product in terms of its beauty. This same interest in developing the taste of the public is manifest by many department stores in both large and

small cities. For example, the L. S. Ayres Department Store of Indianapolis, designates certain weeks in the fall and spring as Home Furnishing Weeks, during which time, space is given for displaying the posters and drawings made by the children of the public schools in their lessons on house planning and decorating. The store not only brings the public school products to the notice of the general public but it gives of its knowledge to the children. For instance, one is not surprised to see a man, in oriental costume, lecturing on oriental rugs to a group of boys and girls of seventh and eighth grade age and illustrating his lecture by means of the rugs displayed in that department. The department stores are in this way helping very greatly in the development of the appreciation of art principles, which is absolutely necessary to the buying of good furniture, good rugs, good wall paper, and good pictures.

What are the museums and galleries of America doing for this development of American design? We find that the American Museum of Natural History in New York City has been having a series of lectures given by industrial experts to artists concerning the practical phases of art work. Artists naturally go to the Metropolitan Museum of Art but at the present time they are going to the Museum of Natural History to hear practical people talk about the practical phases of art work. As a result these artists are going to look at their designs in a more practical way, and realize fully the influence of material and processes of construction upon design.

Among the many who are lecturing to the artists may be mentioned two, James Chittick and Frederick C. Folsom. Mr. Chittick lectures on woolens, worsteds, silks, ribbons, and velvets. He is a textile expert, and is able to tell the designer whether his designs can be carried out by the machine and whether the colors can be obtained. Frederick C. Folsom of the F. A. Foster Company is lecturing on cretonne designing. When such men as these take their time to lecture to designers, they are making a contribution to the educational side of American industry which can not be measured. In this way, a body of artists will be trained in America who will produce beautiful workable designs.

In the Metropolitan Museum of Art we find artists telling the experts in industry the effective use of form, line, and color. Grace Cornell, of Columbia University, Prof. A. W. Dow's assistant in design, gave one of these series of Sunday afternoon lectures to industrial workers. Prof. Chas. E. Pellew, also of Columbia University, lectured here to designers, salespeople, and buyers, upon Dyestuffs of the Ancients. Actual dyeing

experiments have been conducted and specimens of dyestuffs and textiles both native and foreign have been shown. Ruth Wilmott of the same University lectured on costume design, and the effect of the various colors, lines, and values upon the proportions of the human figure.

At the Metropolitan Museum, in addition to these lecture courses, there was opened on December 3, 1917, a new textile gallery. The ceramic gallery, water color gallery, and sculpture gallery, are traditional parts of an art museum. The textile gallery now takes its place as a vital part of national art, at a time when the people are devoting so much attention to the manufacturing of materials. In that gallery are to be displayed embroidery, hand decorated fabrics, and eighteenth century garments. In January the Museum of Natural History exhibited blouses from many countries, among them England, Paris, and Italy.

The Art Alliance has held an exhibit of master craftsmen. When we speak of the work of the master craftsmen we think of furniture, copper and jewelry, wood work and metal work. In this exhibit, under the term master craftsmen's exhibit there were to be seen textiles,—batik, tie and dyed, and block printed. Among the prominent people who exhibited were Martha Ryther, Dorothea Warren O'Hara and the Tannahill Sisters. The exhibit also included jewelry, glassware, ceramic art, furniture by Katherine Hanson, and wood carving by Charles Prendergast.

Similar in nature to this exhibit of master craftsmen there has been held, at the Carnegie Galleries in Pittsburgh, an exhibit of needle work by the Phoebe Brashear Club. This club includes 800 teachers of the Pittsburgh schools, who are not members of the club until they have been away to an art school for study. The money for this advanced study is loaned by the club. The most recent exhibit included Assyrian, Russian, Grecian, and Balkan needlework from the homes of Pittsburgh. This work could be that made in the Old Country and now an heirloom in the family, or it might be made by people who have come to this country recently and possess the skill to make the pieces. The purpose was to get these people to realize that America is interested in their native art. This emphasis upon the textile and needlework of the foreign countries has not been confined to the art clubs, such as the Phoebe Brashear Club; it has also been given wide publicity this winter in Hero Land, the bazaar held at Grand Central Palace, New York City. Here were found, in the various booths, people in European peasant costumes exhibiting textiles and needlework from the peasantry of

many countries: Ireland, Scotland, Wales, Belgium, Holland, France, Portugal, Sweden, Poland, Russia, Roumania, Persia, and Japan.

In addition to the work being done by the museums and galleries, we find the commercial organizations of America holding conventions in which they are emphasizing the spirit of American design.

The dressmakers of the United States meet in an organization, called the Fashion Art League. Here again we have the coöperation of art and industry. At the December meeting in Chicago, Mr. Geo. W. Eggers, who is the Director of the Chicago Art Institute, delivered one of the principal addresses, the subject of which was "How Style Changed in Italian Paintings." Another speaker, Lucy Silk, Director of Art in the Public Schools of Chicago, talked to these dressmakers of America on the art of the public school—its aim and how it ought to meet the demands of dressmakers, and to make better dressed men and women.

The Dress and Skirt Designers' Association is another commercial organization which is emphasizing American designs. At a meeting of this Association there were forty-nine model skirts shown that were American designed, American manufactured, and American made. The material was made in this country, the skirts were made in this country, the designs were made in this country. Formerly these associations have always advertised Parisian models, now this is their advertisement: "American designed, American manufactured, American made," and they are actually living up to their advertisements.

The school men must be included in the list of people who are promoting this union of art and industry in America. Trade schools are contributing their fund of knowledge to the public schools and the public schools are contributing their teaching methods to the trades and industry schools. In Philadelphia we find a union of trade and public schools being planned to prepare for a possible exodus of foreign labor after the war. In all large department stores and in the various trades and industries, classes are organized for the purpose of educating the workers to render the most efficient service.

There are many other factors contributing to this spirit of Americanism in design and industry but the above brief summary of the efforts being made by the designers and manufacturers to use American designs and American materials proves that the two most powerful agencies in our country are united in their efforts to develop in the minds of the consumers an appreciation of the real value, artistic and economic, of American made clothing.

A QUICK METHOD OF CALCULATING FOOD VALUES[1]

CAROLINE L. HUNT

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The purpose of this paper is to suggest a quick method for estimating, rather than figuring exactly, the protein and fuel values of meals, days' rations, and other combinations of food materials. Our thoughts, to be sure, are just now on other matters than total protein and calories, for body-regulating substances—still very unsatisfactorily named—and amino acids are demanding a large part of our attention. An understanding of these new elements in the diet, however, rests upon an understanding of the factors which have always been taken into consideration and the very multiplication of interests makes it desirable to have a quick method of disposing of the old.

The method outlined here, like all other short cuts, is more useful for some purposes than for others. In this case, however, the scheme is most reliable and therefore most useful where it is most needed, i.e. in calculating protein and calories in a long list of foods. To calculate the food value of a meal, even if it is served to one hundred people, is a comparatively simple matter for only a small number of food materials is involved. The calculation of the food value of a week's ration or twenty-one meals, even for one or two people, on the other hand, is a complicated matter for it usually contains many different foods.

The plan is most accurate when followed in connection with a varied diet and least accurate in connection with a monotonous diet. Here again, however, the diet which it does not calculate very accurately is the one which is comparatively easy to figure out by the old method.

Finally it is most convenient when the foods purchased are recorded as they come into the house in accordance with the classification here used. This involves some changes in the ordinary arrangement of the household account book. For example, the grouping of butter, cream, cheese, and milk as "dairy products" has more significance to the producer than to the consumer, for some are important sources of protein and others of fat, a fact which must be taken into consideration when foods are to be classified according to their nutritive value.

According to the plan here outlined, foods are arranged at the time of

[1]Presented at the Tenth Annual Meeting of the American Home Economics Association, Atlantic City, March 2, 1918.

their purchase into the following groups and sub-groups, and protein and calories are determined by means of average values for each group.

GROUP I. VEGETABLES AND FRUITS

Sub-Group I-A. Fresh and canned vegetables and fruits

Record the weights as purchased of all fresh vegetables, including potatoes and other tubers, salad vegetables, greens, etc.; all fresh fruits, including berries and melons; and all canned vegetables and fruits except those to which much sugar has been added. The last mentioned are really sweets and should be classed in Group IV.

Sub-Group I-B. Dried fruits and vegetables

Record the weights as purchased of all dried fruits (raisins, dates, figs, prunes, apples, apricots, etc.) and all dried vegetables except soy beans.

Multiply the weight of the dried vegetables and fruits by 6 to get the approximate weight before drying, and add to the weight of the fresh fruits and vegetables. To determine fuel value multiply the total number of pounds by 250. To determine protein divide the total number of pounds by 70.

GROUP II. PROTEIN-RICH FOODS

Sub-Group II-A. The less watery

Record the weights as purchased of all meats (except salt pork and bacon), poultry, game, fish, canned sea foods, eggs, cheese of all kinds, including cottage cheese purchased as such, peanuts, peanut butter and dried soy beans.

Sub-Group II-B. The more watery

Record the weights of milk, also skim milk, and buttermilk, if purchased as such, oysters, fresh or canned, and other sea foods unless canned.

Divide weight of milk, etc., by 4 and add to the weight of meat, fish, etc., in II-A. To determine fuel value value multiply the total number of pounds by 900. To determine protein divide the total number of pounds by 7.

GROUP III. CEREALS, BREAD AND OTHER BAKERY GOODS

Sub-Group III-A. Dry cereals

Record the weights of all flours, meals, dry breakfast foods, rice, hominy, samp, buckwheat, macaroni, tapioca, pop-corn, crackers, etc.

Sub-Group III-B. Bread and other bakery goods

Record below the weights of all bread, rolls, pies, doughnuts, cake, cookies, except the candy-like kinds that are purchased as such and not made at home. Chestnuts as purchased belong in this group.

Take three-fourths of the weight of the bakery goods which represents roughly the amount of cereal or similar substance they contain and add to the weight of the dry cereals, etc., in III-A. To determine protein divide total number of pounds by 9. To determine fuel value multiply total number of pounds by 1600.

GROUP IV. SWEETS

Sub-Group IV-A. Sugar

Record the weights of all sugars; granulated, pulverized, lump, brown, maple, etc.

Sub-Group IV-B. Sirups, jellies, candies, etc.

Record the weights of sirups, molasses, honey, jam, jelly, preserves, candy, and candy-like cakes and cookies.

Take three-fourths of the weight of sirups, etc. which represents roughly the amount of sugar they contain, and add to the weight of the sugars in IV-A. To determine fuel value multiply the total munber of pounds by 1800. There is practically no protein in any of these foods.

GROUP V. FATTY FOODS

Sub-Group V-A. Butter and other fats

Record the weights of butter, butter substitutes, lard, suet, oil, all cooking fats purchased as such, bacon, salt pork, shelled nuts, except peanuts and chestnuts.

Sub-Group V-B. Cream, ice cream, etc.

Record the weights of cream, ice cream, unsweetened chocolate in the cake, and such foods as nuts in shell, which have a high percentage of fat, but not so high as the foods in V-A.

Take one-fourth of the weight of the cream, etc. and add to the weight of the butter, etc. in V-A. To determine the protein divide the total number of pounds by 30. To determine the fuel value multiply the total number of pounds by 3400.

One example will serve to show how the plan works.

On page 117 of the first edition of Mrs. Richards' "Cost of Food"[2] there is a carefully calculated 99-day dietary study. The results show 94 grams of protein and 2915 calories per day. The following plan shows how the food value of the sixty or seventy materials involved can be calculated by groups.

GROUP I. VEGETABLES AND FRUITS

Sub-Group I-A, Fresh and Canned

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Beets	3	8
Carrots	2	4
Lettuce	8	0
Onions	2	8
Peas, canned	4	0
Potatoes	27	3
Tomatoes, canned	5	0
Turnips	0	9
Apples	9	2
Bananas	2	0
Cranberries	1	8
Lemons	3	0
Oranges	20	0
Total, fresh and canned	88	10
Six times the weight of dry vegetables and fruits	40	8 = the approximate weight when fresh
Total fruits and vegetables	129	2 = 129.125 pounds

Sub-Group I-B, Dried or dehydrated

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Apricots	0	12
Currants	0	2.5
Dates	2	4.5
Prunes	0	8
Raisins	0	5
Beans	0	11
Beans, Lima	0	13
Peas	1	4
Total, dried	6	12

Protein = 129.125 ÷ 70 or 1.845 pounds. Fuel value = 129.125× 250 or 32,281 calories.

[2] The Cost of Food: A Study in Dietaries. Ellen H. Richards. New York, John Wiley & Sons.

GROUP II. PROTEIN-RICH FOODS

Sub-Group II-A, The less watery

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Fowl	14	2
Beef shank	9	
Beef, rib roll	7	
Hamburg steak	3	6
Veal, loin	4	10
Lamb, leg	9	1
Sausage	2	
Beef, dried	1	2
Haddock	8	
Cod, fresh	4	4
Cod, salt	0	14
Peanuts	1	11
Eggs (5 dozen)	7	8
Cheese	0	5
Total	72	15
One-fourth weight of milk	19	4
Total protein-rich foods	92	3

Sub-Group II-B, The more watery

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Milk (77 pints)	77	

92 lbs. 3 oz. = 92.1875 lbs.
Protein = 92.1875 ÷ 7 or 13.7 pounds.
Fuel value = 92.1875 × 900 or 82,968 calories

GROUP III. CEREALS AND THEIR PRODUCTS

Sub-Group III-A, Dry cereals

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Oatmeal	0	9
Pettijohn	0	9
Wheat germs	0	9
Vitos	0	9
Cream of wheat	0	9
Shredded wheat	0	5
Ralston's	0	9
Hominy	1	0
Rice	0	8
Wheat flour, bread	27	4
Wheat flour, pastry	4	10
Corn meal	3	11
Graham meal		12
Crackers, Boston	0	14
Saltines	1	15
Total cereals	44	15

Sub-Group III-B, Bread and other bakery goods

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces

No entries

44 lbs. 15 oz. = 44.3125 lbs.
Protein = 44.312 ÷ 9 or 4.924 pounds.
Fuel value = 44.312 × 1600 or 70,900 calories.

GROUP IV. SWEETS

Sub-Group IV-A, The less watery

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Sugar, granulated	15	9
Sugar, powdered	0	5
Sugar, lump	2	10
Total	18	8
Three-fourths wt. molasses	3	
Total sweets	21	8

Sub-Group IV-B, The more watery

KINDS	WEIGHT AS PURCHASED	
	Pounds	Ounces
Molasses	4	

21 lbs. 8 oz. = 21.5 pounds.
Fuel value = 21.5 × 1800 = 38,700 calories.

GROUP V. FATTY FOODS

Sub-Group V-A, The more fatty

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Butter	12	4
Oil, olive	1	0
Lard	0	7
Suet	0	7
Salt pork	0	7
Bacon	1	0
Walnuts, shelled	0	9
Total	16	2
One-fourth wt. less fatty foods	0	9.5
Total fatty foods	16	11.5

Sub-Group V-B, The less fatty

KINDS	WEIGHTS AS PURCHASED	
	Pounds	Ounces
Cream, 1 quart	2	0
Chocolate	0	6
Total	2	6

16 lbs. 11.5 oz. = 16.719 lbs.
Protein = 16.719 ÷ 30 or .5573 pounds.
Fuel value = 16.719 × 3400 or 56,845 calories.

Summary

	PROTEIN	FUEL VALUE
	pounds	*calories*
Group I	1.845	32,281
Group II	13.170	82,968
Group III	4.924	70,900
Group IV		38,700
Group V	0.557	56,845
For 99 days	20.496	281,694
For 1 day	0.207 (94 gms.)	2,844

The protein is the same as when calculated item by item; the fuel differs only by 2.5 per cent.

In the JOURNAL for March, 1918, there is a report of a very careful and valuable dietary study made at Vassar College. The food per person per day is 113 grams of protein and 3072 calories. The quick method would be no substitute for this careful study, but a comparison will show that it is sufficiently accurate for ordinary checking-up purposes. By the quick method the protein is estimated to be 106 grams per day and the calories 2995, the errors being 6 and 2.5 per cent respectively.

In this case the difference between the two computations in protein comes largely in the cereal group. The rolls used at Vassar were made in the college bakery and, fortunately for those who ate them, contain 13 per cent of protein, which is more than the average protein in wheat flour. It is probable that skim milk was used in their preparation. In the average household, the rolls, if they had been purchased, would probably have contained far less protein. If they had been made at home, the skim milk used would have been figured into Group II and would have raised the total protein to about 108 grams. This may be a good place in which to say that the purpose in selecting the factors for the various groups is to bring the final result too low rather than too high, in order that no inadequate diet shall appear adequate.

A 13-day dietary of my own gives almost the same results for calories when figured by groups and item by item, i.e., 2652 and 2659. The protein is 4 grams lower by groups. This is to be accounted for chiefly by the fact that during the two weeks of the study little butter was used and a comparatively large amount of bacon. The factor for determining protein in Group V is based on the usual proportions between these two foods, and therefore gives too low a result for protein when used on a combination of foods in which butter is displaced to a considerable extent by a fat containing more protein as in army rations, for example. This suggests that a person who understands food values can easily make slight adjustments in the figures to suit exceptional cases or cases in which the number of items in a group is so small that their average is not representative of the members of that group in common use.

No apology is needed, however, even for a discrepancy of 8 or 10 per cent. The fact is that after a person has computed a dietary item by item there always lingers over him a doubt as to its accuracy, He knows that a large error may have been introduced through the selection of the wrong percentage compositions. In the quick method the error is probably little greater and the time required for computation is far less. The time needed will be less still when we have a new account book with the foods arranged in groups according to the plan here outlined.

FOR THE HOMEMAKER

MODIFYING YOUR COOK BOOK TO MEET PRESENT CONDITIONS

ALICE BRADLEY

Miss Farmer's School of Cookery, Boston

Every good housekeeper has a favorite cook book and familiar recipes that she is loath to give up, even though anxious do to her part in conserving food stuffs. Now, although war conditions are causing hundreds of new recipes to be circulated, we turn the familiar pages and find it possible to continue to use our standard cook book and still save wheat, meat, sugar, and fat for our soldiers and the allies. This is done by our selection of dishes, by changing the formulas to include "substitutes," or by eliminating part or all of the fat or sugar.

Let us see how we may make our wartime changes.

Those people who are giving up wheat entirely will pass by the yeast breads as no really satisfactory results come from making raised breads entirely of wheat substitutes. Excellent Boston or New England Brown Bread can be made using ground rolled oats for Graham flour and barley flour for rye meal.

Biscuits, muffins, griddle cakes, and waffles can be made very well without wheat. Barley flour alone or combined with 1 part cornstarch or rice flour to 3 parts barley flour can be used for biscuits, muffins, or popovers. Rolled oats, put twice through the food chopper, may be used instead of white flour, allowing $1\frac{1}{3}$ cups for each cup of flour called for.[1] In corn cakes and muffins barley flour may replace the white flour that is used with the corn meal. Muffin mixtures may be baked in bread pans and sliced when cold. Buckwheat can replace flour in griddle cakes and waffles if more liquid is added.

Recipes for mush made of rolled oats, oatmeal, corn meal, hominy, and rice may all be utilized. Such cereals may be eaten more frequently and in larger quantities than formerly.

[1] This differs from the amount given in the April JOURNAL as determined in the Experimental Laboratory of the Food Administration and the Dept. of Agr. Other samples of rolled oats purchased a few weeks later gave results that agree with the author's.

Turkish and Russian Pilaf make excellent luncheon or supper dishes. Samp may be used in recipes calling for macaroni. Noodles made of corn flour and no wheat at all are delicious as macaroni substitutes.

Corn flour gives good results as thickening in white sauce or cream soups; barley, buckwheat, or oatflour may be used in brown or tomato soups or gravies. Cornstarch may also be used, one-third less being required than the amount of flour called for in the recipe.

As a substitute for bread and muffins both white and sweet potatoes may be used. Many recipes for preparing them will be found in the cook book. Make the potato popular by serving it in a variety of ways and two or three times a day.

In steamed and baked puddings requiring flour, barley flour is probably the cheapest and most satisfactory substitute although buckwheat or ground rolled oats may be used instead.

One cannot patriotically have pastry as light and rich as formerly, but tempting, digestible crust for pies can be made with barley flour instead of white flour, or with ground rolled oats and very little shortening.

In ginger breads, cookies, and cakes many formulas are possible when making them without wheat.

In sponge cakes $\frac{1}{2}$ cup potato flour may replace 1 cup white flour with excellent results.

One hundred per cent rice, corn, or potato flour is good in cookies and gingerbreads. Use enough to make them stiff enough to roll out.

Mashed potato may be used as a substitute in biscuits, muffins, and cakes. One cupful will replace about $\frac{1}{2}$ cup of flour and $\frac{1}{2}$ cup of liquid which must be omitted from the recipe.

Corn meal, finely ground, may replace all or part of the flour in gingerbreads and molasses cookies if desired.

More meat substitute dishes are found in even the old cook books than people realize until they stop to think what a variety of foods come under that head. There are whole chapters on eggs, fish, chowders, and cream soups without stock, there are bean and pea dishes, while many of the dishes formerly served as entrees are sufficient for the main part of a meal. Here also are recipes showing how leftovers may be satisfactorily utilized.

If you limit your consumption of fat to $\frac{3}{4}$ of a pound per week, or even 1 pound per person you will have to make many changes in your favorite recipes but will not need to discard them altogether. In many

recipes calling for 2 tablespoons of butter 1 tablespoon or an equal amount of oleomargarine, cooking oil, or dripping may be used instead, to save fat.

Rich sauces and cakes will have to be given up entirely until after the war instead of being changed, unless the amount of fat needed can be saved from the weekly allowance. Deep fat frying recipes should not be followed as written. Croquettes may be coated with crumbs mixed with 1 or 2 tablespoons of melted fat, and baked in the oven, as that requires very much less fat than is necessary for deep frying.

To save sugar, the amount called for can be reduced without harm in almost all recipes. In light colored muffins substitute light colored corn syrup; in dark muffins use molasses; on fried mush, waffles, and griddle cakes use maple syrup (pure or imitation), honey, hot molasses, or marmalade.

In desserts, pudding sauces, pie fillings, cakes and cookies, use half the amount of sugar called for with an equal amount of corn syrup. Use sugar in cooking only when it can be saved from the allowance of 3 pounds or less per person per month. Many cakes and desserts made with molasses will be found in your cook book. Try a maple sugar frosting when you do make cake or use honey instead of sugar for a boiled frosting.

The cook books should be used to suggest greater variety in the ways of serving vegetables. During the summer, dinners with several vegetables and no meat or fish may be frequently provided. The protein will be supplied by beans or peas or by milk made into white sauce to go with the vegetable. Use the water in which vegetables are cooked for soups and gravies to conserve mineral salts.

The salad chapters also require only slight changes. Peanut, cotton seed, or corn oil may take the place of olive oil in the salad dressings, but even to these we should help ourselves sparingly at table that precious oil may not be wasted on the plates. Many salads make excellent substitutes for desserts and others can replace meats. Still others will satisfy the appetite and take the place of bread and butter.

Excellent recipes for serving and preserving fruits will be found. These may take the place of wheat desserts. Home canned jellies, fruits, and vegetables may replace the imported ones called for in various recipes.

Look through the reading matter of the cook book and learn how to fry out fat and how to use up leftovers of all kinds that waste may be prevented.

Following are changes that would be made in the recipes for a simple dinner menu.

Cream Soup. Oleomargarine may take the place of butter and 1 tablespoon used instead of 2, and 2 tablespoons corn flour in place of 2 tablespoons wheat flour. Use vegetable stock instead of water when convenient.

Baked stuffed fish. Use dry wheatless muffin crumbs in place of cracker crumbs in stuffing; use oleomargarine in place of butter; use fat left in baking pan, instead of butter, to make a sauce; save the head and bones of the fish for fish stock.

Mashed potatoes. Follow recipe but cook potatoes in jackets to conserve mineral salts.

Green peas. Save water in which they are cooked and add it to a cream soup, stew, or gravy in place of plain water.

Bread. In place of serving white bread use a "Quick Bread."

Cheese and currant salad. Home made buttermilk or sour milk cheese may be used in place of cream cheese, and currant jelly in place of Bar-le-Duc currants.

French dressing. Follow the rule as given, using if necessary a cheaper vegetable oil to replace part or all of the olive oil.

Cottage pudding. Use $\frac{1}{3}$ cup sugar and $\frac{1}{3}$ cup corn syrup in place of $\frac{2}{3}$ cup of sugar; and $2\frac{1}{4}$ cups barley flour in place of $2\frac{1}{4}$ cups white flour; use other ingredients as called for.

Chocolate sauce. Use $\frac{1}{2}$ cup corn syrup and 2 tablespoons sugar in place of 1 cup sugar.

The housekeepers who are accustomed to success because they have learned how to follow exactly the recipes in reliable cook books may make all these changes and yet obtain satisfactory results.

Any food consumed over and above the needs of the human body is wasted.

A COMPARISON BETWEEN CANNING AND DRYING

EDITH ALLEN AND JENOISE SHORT

The following experiment was made last summer to answer the question that many housekeepers are asking this spring: "Is it more profitable to can or dry?" The cost of canning equal weights of six common vegetables and five fruits was compared with the cost of drying them. A record was made of the time required for the preparation, the labor involved, the cost of gas consumed, the cost of containers and the weight and the volume of the finished products.

A maxim well known to good housekeepers is that any oven is giving most efficient service when it is filled to capacity. For this reason the cost of drying the weights of material used in this experiment was based upon the amount of fuel consumed by an oven of average household size, containing three shelves each 16-inches square filled to capacity. The cost of heating a 12 quart pail, the size of container that best holds three 1-quart jars, and is most convenient for canning food in small quantities, was the basis for calculating the cost of canning.

After drying, the food was soaked and cooked to see how nearly it approached the volume of the canned product and to determine its flavor and appearance. A portion of the food prepared in this way was placed on the counters of a certain cafeteria without any indication that it was not an ordinary canned product. All patrons who selected and ate the cooked dried food were requested to give an unbiased opinion of what they had eaten. The majority of patrons failed to recognize any difference from their usual dish and all praised both flavor and appearance.

It matters little how much we approve theoretically of drying unless a palatable product is the result, and people learn to eat the dried food; otherwise this method of conserving food cannot be said to be successful.

Both vegetables and fruits, with the exception of berries and cherries, were subjected before drying to a preliminary cooking of from one to fifteen minutes in boiling water or live steam. The carrots were cut in slices of from $\frac{1}{8}$ to $\frac{1}{4}$ inch in thickness and steamed eight minutes. The corn was boiled, cold dipped, and cut from the cob. The spinach was steamed for five minutes. The apples were cut in $\frac{1}{8}$ inch slices and steamed three minutes, and the peas were shelled and steamed for five minutes.

The canning of vegetables and fruits was carried out according to the directions given in the United States Department of Agriculture Farmer's Bulletin 839, Home Canning by the One Period Cold Pack-Method.

A comparison of the finished products as foods proved very interesting. Apples, corn, carrots, huckleberries and raspberries make fully as good a product when dried as when canned, and may be more easily stored since they use less space. Dried cherries and dried tomatoes are an entirely different product from the canned, but they are very palatable and well worth drying for special uses. The cherries are excellent for puddings and the tomatoes may be used in escalloped dishes made from rice or macaroni, and for flavoring soups and stews. If young peas are dried they are preferable, when cooked, to the ordinary canned product. Peaches change in flavor and though very good are not equal to the canned product.

It is possible to dry string beans or spinach so that they compare favorably with the canned product, but it takes a great deal of skill. In consequence there is apt to be considerable waste in drying them. The odor of cooking dried string beans or spinach is not particularly appetizing, though when well dried and cooked they have nearly the same flavor as the canned ones.

There is little difference in the labor involved in drying and canning. The attention which the material requires during the process of drying is off-set by the labor of preparing the jars and packing the product to be canned.

The containers for the dried product are very light, weighing from 1 to 2 ounces each, while jars to contain the same amount of material would weigh from 1 to 1½ pounds. The paper containers have also the advantage over glass jars of being unbreakable and less expensive. The material when canned weighs five to ten times as much as when dried. The volume varies even more than this.

It is practical for the housewife to both can and dry, doing neither one to the exclusion of the other. Each process has certain advantages, as a rapid survey of the table will show.

There is especial need for experience in handling the dried products and preparing appetizing dishes from them. While we are learning more about how to dry, more experimental work should be done on cooking the dried product.

Results of canning and drying experiment

PRODUCT		QUANTITY	WEIGHT AFTER PREPARATION		COST OF GAS	NET WEIGHT		VOLUME
			lbs.	*oz.*		*lbs.*	*oz.*	*pints*
Tomatoes	Dried	12	2	6	$0.019		2½	½
	Canned	12	2	6	.004	2	6½	2
String beans	Dried	2 quarts	1	6	.017		3	1
	Canned	2 quarts	1	6	.0075	2		2
Corn	Dried	18 ears	2	10	.012		8	1
	Canned	18 ears	2	10	.0092	2	10	2
Peas, unshelled	Dried	3 quarts	1	2	.017		3½	½
	Canned	3 quarts	1	2	.01	2		2
Carrots	Dried	11	2		.017		4	⅜
	Canned	11	2		.0075	2	3	2
Spinach	Dried	7 quarts	5		.014		3	2
	Canned	7 quarts	5		.0101	1	8	2
Apples	Dried	1⅓ quarts	1	3	.012		3½	½
	Canned	1⅓ quarts	1	3	.005	1	2	2
Peaches	Dried	1½ quarts	1	12	.016		5½	¾
	Canned	1½ quarts	1	12	.006	2		2
Raspberries	Dried	1 quart	1		.013		2	½
	Canned	1 quart	1		.0022	1	1	1
Cherries	Dried	½ basket	2		.017		7	¾
	Canned	½ basket	2		.004	2		2
Huckleberries	Dried	1½ quarts	2		.016		5½	½
	Canned	1½ quarts	2		.022	2		2

Be a Food Controller in your own home and count yourself fortunate that you have food to control.

TIME REQUIRED FOR HOUSEWORK IN A FAMILY OF FIVE WITH SMALL CHILDREN

MARION WOODBURY

The author of this article writes:

"The statement was made in a recent 'short course' that by systematizing her work any woman could be done by 10.30 every day. I take exception to this. In a family of adults or one with older children this might be possible, but there are many families in which household and nursery duties must be performed by one person. The following schedule is my attempt at a solution of this problem."—THE EDITOR.

The following schedule of daily and weekly routine work was made out by the mother of the family, who does most of the work. The family consists of father, mother, child of four years, and baby of nine months, with a college student who works for room and board. The house was built by the occupant and is compact and convenient; it contains a large living room, small play-room, a dining room, and a kitchen on the first floor, four moderate sized bedrooms and a bath on the second, with small staircase halls.

As shown by the table, the routine work, cooking and care of children are performed by the housewife. The student dusts and washes dishes. He also sweeps the entire house once a week, while the washing and ironing are done in the house by a laundress.

All operations have been carefully studied with a view to performing them as efficiently as possible. When small children are to be cared for, great efficiency is sometimes difficult; interruptions will occur and sudden changes of plan are often necessary. In fact, the whole routine must be based upon their hours for eating and sleeping and must be changed when these change. In so far as the time required for any one operation is concerned, this schedule is accurate; the order in which these are performed varies considerably.

No more time is given to the personal care of the children than is necessary to maintain the present-day standards of hygiene and training. More time could well be used in directed play, elementary instruction, and outings if it were available.

It is impossible to estimate what proportion of the time occupied in weekly work is due to the presence of children in the house. One can simply say "a family of five" and be sure that the children are responsi-

ble for more, rather than less, than a proportionate share in the washing and sweeping.

The afternoon program varies somewhat. Under present conditions marketing is best done in person. Through coöperation with a neighbor one trip to town suffices for the week. Coöperative cooking has also proved a time-saver—only such articles as pies, cakes, quick breads, gelatin salads, and desserts being attempted.

Since the man of the house holds an official position in a University, many calls must be made and received and considerable simple entertaining done. The afternoon given up to Red Cross work has in part supplanted these duties with the whole community. In normal times probably one afternoon a week would be spent in social activities.

A good deal of sewing and some writing (accounts, recipes, etc). must be done in the evening. It has been found impossible to leave the evenings entirely free.

A woman student is employed when it is necessary for the housewife to be out and also occasionally for plain sewing. Her time would average about ten hours weekly.

Work done by housewife

HOUR	HRS. MIN.	HOUSEHOLD DUTIES	HRS. MIN.	NURSERY DUTIES	HRS. MIN.	PERSONAL
6.15 to 6.45			10	Feed baby and dry	15	Bathe and dress
			5	Bathe and dress child		
6.45	15	Prepare breakfast				
7.00					30	Eat breakfast
7.30	30	Clear table, put away food, look over larder, plan meals, order from stores, get out supplies for day				
8.00			30	Wash diapers, fold dry ones, prepare bath		
8.30			30	Bathe baby and give child oral number lesson		
9.00 to 9.30	15	Make beds and tidy bed rooms	15	Feed baby, tidy bathroom, rinse night clothes, put baby to nap		

Work done by housewife—Continued

HOUR	HRS. MIN.	HOUSEHOLD DUTIES	HRS. MIN.	NURSERY DUTIES	HRS. MIN.	PERSONAL
9.30	15		15			
to 10.00		This 30 minutes is allowed to take care of phone calls and various interruptions, also personal care of children during entire forenoon				
10.00			30	Prepare modified milk, orange juice, for 1 day, gruel or custard for 2 days and give child reading lesson while working		
10.30	45	Prepare (1) luncheon dish; (2) soup. salad, or dessert; (3) materials for quick bread; (4) meat (or substitute) and vegetables and dessert for evening dinner				
11.15			15	Take baby from nap, dry, and feed orange juice		
11.30 to 12.00	15	Prepare luncheon	15	Prepare separate meal for child: meat or egg, vegetable, bread and butter, fruit or dessert		
12.00					30	Eat luncheon
12.30 to 1.30	30	Clear table, stack dishes for washing, put away food. Tidy first floor, water plants	30	Feed baby gruel and custard, warm milk and feed in bottle. Settle both children for naps.		
1.30					1–0	Rest or read except when going out.
2.30 to 3.00			15	Dress children	15	Dress.

Work done by housewife—Continued

HOUR	HRS. MIN.	HOUSEHOLD DUTIES	HRS. MIN.	NURSERY DUTIES	HRS. MIN.	PERSONAL
3.00	1–30	Special tasks each day. Monday. Change bed, bathroom, table and kitchen linen and put up washing; do accounts and household desk work Tuesday. Sew for children and house Wednesday. Red Cross work 1.00-5.00 Thursday. Put away clean clothes and mend. French lesson while sewing Friday. Prepare rooms for cleaning, market for 2 families 1.00–5.00 Saturday. Bake				
4.30			30	Feed baby and put to bed		
5.00	30	Prepare dinner				
5.30					30	Eat dinner
6.00	15	Prepare cereal and fruit, set table for breakfast				
6.15			45	Read to child and put to bed		
Total	5–0		5–0		3–0	

Work done by other persons

	HRS. MIN.	CLEANING, DISH WASHING, ETC.	HELPER
	15	Dusting and tidying of play room and own dresser Dusting of tables and setting of table for luncheon	4 year old child
	30	Dusting of floors and furniture	Student help
	1–30	Dish washing and tidying kitchen	Student help
Total	2–15		

Work done by other persons—Continued

	HRS. MIN.	WEEKLY WORK	HELPER
	5–0	Washing	Laundress 1½ days per week
	4–0	Ironing	
	3–0	Miscellaneous cleaning	
	7–0	Weekly sweeping and cleaning of first and second floor rooms and cellar	Student help
	2–0	Floor polishing, etc.	
Total	21–0	or 3 hours daily	

Summary

Daily work	*Hours daily*	*Total hours daily*
House	3–45	
Cooking	2– 0	
Children	5– 0	
	10–45	10–45
	Hours weekly	
Weekly work		
Washing	9– 0	
Cleaning	12– 0	
Cooking	1–30	
Miscellaneous afternoon work	8–30	
Outside work	4– 0	
	35– 0	5– 0

SUBJECT TO CHANGE

"Conservation of food must be adjusted to meet necessities from time to time, for neither production nor Allied demands are constant factors, nor can any of these factors be anticipated for long periods in advance in the disturbed conditions in which we at present live."—U. S. Food Administration.

EDITORIAL

The Children's Year. It was once said of a meeting of the American Home Economics Association that during the whole session no mention was made of the home, of the child, or of the community. That must have been long ago, for today no home economics worker could, if she would, be so oblivious to the needs of the world as even temporarily to put away from her thoughts or her speech the home for which she is working, or the community it serves, or the child whose up-bringing is its main purpose. Today especial interest centers upon the child, both because of the inevitable necessity of caring for child welfare in wartime, a necessity made evident by the great attention given to legislation for children and other work in their interest by the warring nations, and because our own Children's Bureau has depicted so plainly the needs of children, and shown so clearly methods that may be used toward protecting and safeguarding them, that the whole country is convicted of its past failures and aroused to undertake with its best effort the needed work.

Children's Year has entered upon its second month, with about half the states organized and having some form of work under way. The District of Columbia may be taken as a fair example of the way in which the work of Children's Year is being carried out. It has been organized under an executive committee composed of the executive chairman, the officers, the chairmen of five general committees, and two members at large. These sub-committees have charge of practically all fields of work, for children of all ages. The work is grouped under protection of infants, mothers, and young children; home care of older children; child labor and education; recreation; and children in need of special care.

The first committee is now conducting the weighing and measuring test throughout the city and its suburbs, and it is hoped that the spirit and interest thus aroused will give the needed impetus to the work which should follow logically upon it, namely, the further examination of those children whose weight and height are below the average, and the attempt to put as many of these children as possible into better condition. More than 9,000 children have been registered and it is expected that the number will be increased to more than 10,000 before the test is finished, thus extending the test to about one quarter of the children of the given ages in the city. In addition to this, the committee has arranged for the examination by physicians and nurses of all children whom the test shows to be below the average.

The creation of a Division of Child Welfare in the Department of Health of Washington is among the great objects to be accomplished. Congress has been asked to give $15,000 for this purpose, and it will be one of the functions of the Children's Year Committee to push this bill in Congress. In case the bill passes, Dr. William C. Woodward, Health Officer of the District, will probably take over the administrative offices of the Children's Year, thus relieving the committee of the necessity of raising money to pay the overhead charges. The work of the Committee will then be directed to the creation of public sentiment and the educating of public opinion to take advantage of the opportunities offered to the community, through the Children's Year campaign, for making the Capital city the model city with respect to public protection of child life.

The next annual meeting of the American Home Economics Association will be held in Chicago, June 27 to June 29, at the University of Chicago.

THE QUESTION BOX

Barley flours. In reply to a question about barley flours, Miss Daniels writes:

Barley flours differ among themselves. A recipe which is successful with one flour is not in all cases successful with others.

The early barley flour put on the market seemed to take a smaller proportion of liquid than wheat. This, however, we have not found to be true of the flours which we have been using during the last four or five months. Because of the increased shortage of wheat, millers have used a larger proportion of the grain for the barley flour. One company in Wisconsin began by milling 56 per cent of the pedigreed grain which contained about 14 per cent of protein. They are now using barley containing a smaller proportion of protein and are milling a much higher percentage of the grain.

We have been busy checking our early work with our later work and our new pamphlet[1] will contain the proportions which hold for the products of three large mills.[2] On these, we have done more work than on

[1] Twelve Ways to Use Barley—Revised edition.

[2] Dodge-Hooker, Washburn-Crosby, Quaker Oat Company.

the other flours. These we have found can be used in the same proportions as wheat flour in all cases except yeast breads. The fifty-fifty proportion makes an acceptable bread. When using the barley for yeast bread, we get more satisfactory results when we add a small amount of cooking soda to the barley flour. One teaspoonful with six cups of barley flour is a fair proportion. The barley flour as milled now contains considerable acid. This together with the acid produced by the yeast produces a loaf which is not unpalatable, but rather unusual, the acid flavor being more pronounced as the bread stands. This slight acid taste is not at all evident in mixtures made of baking powder or sour milk and cooking soda. Barley flour may be used in white sauces in the same proportion as white flour, the thickening qualities of the two flours being very similar.

Barley baking powder biscuits are satisfactory. One must roll them slightly thicker than when wheat flour is used and the mixture is somewhat softer. We use for these the same proportions of flour and liquid (by measure), as if white flour were used, but since there is no gluten formed in barley, the consistency is softer. Not knowing this, the housekeeper sometimes gets her biscuits too stiff.

If something could be done to standardize barley flour, it would help the housekeepers materially, as well as the bakers. Housekeepers are accustomed to a certain kind of wheat flour and they must acquire the same feel for barley mixtures. Having once learned how to handle a flour, they have better success if they always use that same flour. If the various barley products on the market were standardized, we could pay less attention to the brand.

A request has come for slides to be used as illustrative material in connection with the course in textiles, and also for pictures and slides illustrating equipment for household economics rooms.

Can anyone give information as to where such slides can be obtained?

An inquiry has come as to which method is found best by high school teachers—alternate days, semesters, or years, for sewing and cooking. Will any who have had experience with these different arrangements of work, and who believe that there is something more involved than an adjustment to convenience of program, send us their views as to the advantages and disadvantages of one as compared with the others?

COMMENT AND DISCUSSION

A COÖPERATIVE VENTURE

"One that consistently reports its set backs as well as its successes."

I like to send you a word about our coöperative ventures semi-occasionally. Our store has unfortunately been compelled to suspend its coöperative existence. We were doing better than ever before and our business had gotten up to $120,000 a year, but in our earlier history poor management had impaired our capital and when it came to doing a much larger bulk of business it naturally demanded larger capital and the higher prices of everything made the stock on the shelves require a much larger investment. But the store, while it was right on the eve of success we all thought, had not yet thoroughly demonstrated this and the times were not propitious for raising $5,000 or $10,000 of new capital as we should have been obliged to do, and so Mr. Harris, who was our largest creditor, simply took over the business. It is going well, though it is no longer coöperative. It is administered in a broad, public-spirited way. Mr. Harris has just written a book on coöperation, "Coöperation the Hope of the Consumer," which has been published by Macmillan. We have at least a hundred thick and thin coöperators here and we are just biding our time for the present, hoping the chance will come soon to make some new start.

Our Coöperative Kitchen has for the second time moved into larger quarters, twice as large as the last, and has now one of the old boarding houses of the town, with thirty-five rooms, the largest place in town with the exception of the Montclair Hotel. Each move has meant the incurring of indebtedness for additional equipment and the slow cutting down of that indebtedness, then another expansion; but we seem able to run a boarding house with fair success, on an ever larger scale. Our assets are well over our liabilities, there does not seem any likelihood of larger quarters for years now, the demand for board is steady, and once all difficulties are solved in this line—they are almost solved now—we shall be free to develop our outside service as we have meant to do but have been delayed in doing by having to lay these other foundations.

EDGAR S. WIERS,
Montclair, N. J.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

The Household Budget. By JOHN B. LEEDS, 234 W. School Lane, Philadelphia Pa., 1917, pp. 246. $1.50. By mail of the Journal, $1.58.

The increasing number of books from specialists who have applied their knowledge to the solution of household problems shows a marked change in the evaluation of the work of the home. From no one is this new attitude more helpful than from the teacher of economics—the subject whose principles have been so frequently ignored in any discussion of household management.

Professor Leeds' convincing presentation of the economic value of the labor of the housewife, with his suggestion that purchasing commodities is an act of production rather than of consumption, is especially valuable today.

The book includes the report of a first hand investigation of the amount of time spent in house work; with an analysis of the results. A new arrangement of budget headings is useful and suggestive.

The analysis of the budgets of two groups of families whose incomes are respectively $1800 and $2000 a year is a distinct contribution to the literature of budget making, as the studies in the past have been largely confined to families with a bare living wage.

His conclusions are that although economists in general recognize household activities as productive, yet none of them give it the consideration that they give to the productive labor of men or to the labor of women in factories or business offices. He proves that if we are interested in the sum total of household and national income we must include the work of both men and women workers wherever it is done.

GERTRUDE VAN HOESEN,
University of Chicago.

Food Problems. By A. N. FARMER AND JANET RANKIN HUNTINGTON. Boston: Ginn and Company, 1918, pp. 90. $0.27. $0.20 to boards, teachers, and schools.

This attractively arranged and carefully planned little volume in eighty odd pages offers some of the most constructive suggestions for educational work in connection with the campaign for food conservation that have yet been forthcoming.

It presents in eight chapters a series of food problems for the sixth, seventh, and eighth grades that are designed "not to teach arithmetic" but "to use arithmetic to teach the meaning, necessity, and practice of food conservation." In the introduction the authors state, "Through the use of arithmetic in solving these problems children will be impressed as they could not be in any other way with the immense and fundamental character of the food-conservation campaign." Nor do the authors limit their suggestions to the presentation of these facts through one school subject. In the very helpful section entitled "Suggestions to Teachers" correlation with other subjects is urged. The teacher is stimulated to keep in touch with and to do her part to remedy community conditions through the active interest of the children. Local markets are to be studied for current prices and conditions, that first-hand information may form the basis of the lessons. No claim is made that the information provided is exhaustive, but salient facts are clearly and concisely stated. A helpful list of bulletins giving more detailed facts is appended.

Those making use of the book should keep in touch, through their State Food Administrator, with the current information issued by the Food Administration in order to correct to date the facts relative to demands for food that are being made, supplies available, and recognized substitutes.

CARRIE ALBERTA LYFORD,
U. S. Bureau of Education.

Department Store Merchandise Manuals. New York: The Ronald Press Company, 1917. $1.25 a volume.

The Notion Department. By M. ATTIE SOUDER, pp. 160.

The Cotton and Linen Department. By Eliza B. Thompson, pp. 182.

A series of twenty-five merchandise manuals edited by Beulah E. Kennard, are now in preparation, and promise to be not only interesting but full of valuable practical information to all who are interested in textiles, clothing, and house furnishing.

To quote from the editor's preface ' This series is for the purpose of imparting definite and authentic information to salespeople who realize that to give satisfactory service to the customer, they must possess a thorough knowledge of the goods they sell, as well as a knowledge of how best to sell them." The series will fill a two-fold purpose,—the preparation for better salesmanship, and more efficient and intelligent buying on the part of the consumer.

Five of these manuals are now on the market. The two listed above are more closely related to household arts than the others that deal with The Leather, The Jewelry, and The Stationery Departments.

The one on Notions is unique and most interesting. It is a small encyclopedia in itself, containing in the one small volume information which could be found only by consulting many volumes, while some of the material probably could not be found in books.

The prevalent idea that the Notion department is a heterogeneous collection of small articles having no relation to each other is overthrown when, in the introduction, the stock of this department is definitely classified under the following topics: (1) Sewing Tools and Supplies, (2) Dress Accessories and Findings, (3) Hair Goods, (4) Shoe Supplies, and (5) Sundries. Buttons are discussed in a separate manual. All of the important articles that would come under each of these five topics are included in lengthy discussions of each. In some cases a brief history of the article is given to show the great improvement that has been made and to stimulate appreciation of the article as it is now on the market. The steps in the manufacturing processes are given just enough in detail to give a comprehensive idea of the construction. Many interesting points are brought out, as, for example, the fact that so simple an article as a needle must go through the hands of 100 skilled workmen, and the journey through the factory takes from six to eight weeks. Lists of the standard makes; tables of sizes; and cost of production are given.

The subject matter is organized in a most definite and logical way. Unimportant and unnecessary details are omitted, and the material is given in a clear cut, straightforward style. "Suggestions of service to customers" are most practical and will train, not only for more efficient buying, but for the best use and care of the articles bought.

The Cotton and Linen Manual is written in the same direct style. The material is well organized. It is not quite so interesting perhaps as the Manual on Notions because we are more familiar with the subject matter it contains.

It first classifies the materials that would come under the cotton and linen goods departments and gives suggestions for attractive arrangements and displays of goods. The usual information as to the source, cultivation, and manufacturing processes of cotton and flax are given. Then chapters on finishing of cloth, dyes and dyeing, mixtures, adulteration and imitation, and tests for cotton and linen are especially good. They contain a great deal of most practical information which the average shopper does not know and which will be of great value in buying table linen, towels, and dress materials. A list is given of the standard cotton and linen materials that sell by the yard; the origin of the name, their distinguishing characteristics, wearing qualities, and uses.

IVA BRANDT,
Iowa State College, Ames, Iowa.

School and Home Gardening. By KARY K. DAVIS. Philadelphia: J. B. Lippincott Co., 1918, pp. 353. $1.28.

The Home Garden (Patriot's Edition). By EBEN E. REXFORD. Philadelphia: J. B. Lippincott Co., 1918, pp. 198. $1.25.

How to Make the Garden Pay. By EDWARD MORRISON AND CHARLES THOMAS BRUES. Boston: Houghton Mifflin Co., 1917, pp. 176. $.75.

The Ch ld's Food Garden. By VAN EVRIE KILPATRICK. Yonkers-on-Hudson, N. Y., 1918, pp. 64. $.48.

School and Home Gardening, as the title indicates, is intended for school as well as home use. It is not only a text book, treating in detail the usual garden subjects, but it is also a treatise on the educational and social aspects of garden making.

Many illustrations and diagrams clarify the plans and instructions. Chapters 18 and 19 constitute very complete garden calendars for the northern and southern states.

A bibliography of literature for gardeners is given in the appendix.

In *The Home Garden*, general instructions adapted to amateurs are very fully given under the headings: Location and Soil; The Preparation of the Garden; Planning the Garden; Planting the Garden; Garden Implements; Weeding and Transplanting; The Hot-Bed and Cold-Frame; Insecticides and Fungicides; What to Grow. These are followed by six chapters devoted to the growth of miscellaneous plants, grapes, and berries. Thirty-two pages are given to the gardener's calendar containing "suggestions and reminders of work appropriate to each month."

How to Make the Garden Pay is a more concise and simpler volume than either of the above. After discussing right planning and profitable methods, the authors take up in alphabetical order the common vegetables, giving in connection with each one the information essential for the planting and general care of each.

Insect enemies and diseases are treated in a chapter by themselves.

The appendix includes tables giving fuel value and percentage composition of fresh vegetables and other foods; a garden planting table giving amounts of seeds required, distance apart, time of planting, time of maturing; and a home gardener's calendar for northern states.

"It is the purpose of this book to tell both novices and experienced gardeners something about ways and means of making small gardens profitable," and the authors have succeeded in doing this in a most clear, concise, and interesting way.

The Child's Food Garden is written as "a true beginner's book, with directions so clear and definite that any child who can read can understand them."

This small book contains a plan of the garden, and general directions as to preparation of soil and other operations; more definite directions for planting and cultivating a number of vegetables and flowers; an outline of work for each month of the year; suggestions and a time table for canning and drying; methods of dealing with plant enemies and caring for plant friends; frost maps and planting tables.

It is evident that so many subjects could not be more than touched upon in so few pages, but the garden information is sufficient to enable a child to be successful in a small space.

KETURAH E. BALDWIN

PAMPHLETS RECEIVED

Issued by the United States Department of Agriculture:

United States Food Leaflets: No. 8, *Instead of Meat;* No. 9, *Vegetables for Winter;* No. 10, *Plenty of Potatoes.*

Partial Substitutes for Wheat in Bread Making. By Hannah L. Wessling. No. A-91.

A Successful Community Drying Plant. C. W. Pugsley, Farmers' Bul. 916.

Issued by Teachers College, Columbia University:

Economical Diet and Cookery in Time of Emergency, Technical Education Bulletin No. 30, price 15 cents; *How to Plan Meals in War Time*, Technical Education Bulletin No. 33, price 20 cents; *Ninety Tested, Palatable and Economical Recipes*, Technical Education Bulletin No. 34, price 30 cents; *Some Food Facts*, Technical Education Bulletin No. 27, price 5 cents; *Some Sugar-Saving Sweets for Every Day*, Technical Education Bulletin No. 35, price 20 cents; *Simple Lessons on the Physical Care of the Baby*, Technical Education Bulletin No. 31, price 20 cents; *Lessons in Home Nursing*, Technical Education Bulletin No. 32, price 20 cents.

Issued by the University of Texas:

Food Conservation Bulletins: No. 1, *Save the Wheat;* No. 2, *Save the Sugar;* No. 3, *Save the Meat;* No. 4, *Save the Fat.*

Issued by the Agricultural Extension Service of the University of Wisconsin:

Hints on What to Eat During the War. Circular 100, February, 1918.

Know Your Foods. A chart classifying foods in accordance with their composition.

Ways of Using Corn. Circular 95, January, 1918.

Issued by the Iowa State College of Agriculture and Mechanic Arts:

Short Course Class Notes: No. 2, *Cereal Foods;* No. 7, *Study of Nutrition;* No. 8, *A New Study of Vegetables;* No. 9, *Salads;* No. 10, *Cake;* No. 12, *Inexpensive Cakes;* No. 13, *Physical Efficiency;* No. 21 (revised) *Suggestions for Meatless Meals;* No. 23, *Plain Patterns in Cookery;* No. 24, *The Dining Room;* No. 26, *Fats and Oils.*

Emergency Leaflets: No. 13, *Home Preservation of Eggs;* No. 25, *Fruit and Vegetable Drying;* No. 27, *Wheat Saving Suggestions.*

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NEWS FROM THE FIELD

The Annual Meeting at Atlantic City. The annual meeting of the American Home Economics Association, that had been planned for August, 1917, was postponed because of war conditions that involved the attention of so many of the members of the Association that it was thought unwise to attempt a formal convention at this time. During the fall and winter, the need of getting together was more and more felt, and the decision to extend the session usually held with the Department of Superintendence of the N. E. A. into a two-day meeting with that organization was welcome.

The meetings were held on Friday and Saturday, March 1 and 2, preceded by a council meeting on Thursday evening. There were about 200 present at each session.

The president of the Association, Miss MacKay, called the meeting to order on Friday morning and, in her opening address, outlined the work of the Association during the past year and a half, and its plans and purposes for the future. The program was planned for round-table discussions rather than more formal addresses.

Dr. Ruth Wheeler of the University of Illinois, presided at the round table on Friday morning. The chief topic of the morning was What and How to Teach Food Values to the General Public, and Dr. McCollum of Johns Hopkins presented the practical and helpful paper that will be found in this number of the JOURNAL.

Dr. McCollum was followed by Miss Caroline Hunt of the Department of Agriculture, whom Miss Wheeler introduced as one of the people who furnish a good example of the statement that "the highest science is the ability to put knowledge into usable form." Miss Hunt's paper, on A Quick Method of Calculating Food Values, is also included in this number of the JOURNAL. Those who have tried this method are most enthusiastic as to its value as a time saver without loss of accuracy.

Miss Mary Creswell, of the Office of Extension, South, outlined the development of the work in the South, showing the tremendous progress that has been made during the last few years, and the changes that it has brought about in the home. Her paper had an important bearing upon what we shall teach in extension work. Dr. Alice Blood, who followed her expressed for the teacher the sense of responsibility to the community and showed how the city housekeeper may often be best reached by the one who goes into the home on some other errand. Both papers will be published later in the Journal.

Miss Florence Ward, of the Office of Extension Work, North and West, emphasized especially our coöperation with the Food Administration. Dr. Langworthy made a contribution toward our teaching practice that is embodied in a paper that will be published in the July JOURNAL.

Further discussion largely took the place of questions to Dr. McCollum.

The afternoon was a general session with the N. E. A., at which Miss Arnold was the chief speaker. A large audience greeted her at the Million Dollar Pier, and the Association was justly proud of her as our representative.

At the evening meeting, Mrs. Woolman spoke on Clothing and the War, calling attention particularly to the need of coöperation with the government, as well as with the textile men and such bodies as the National Garment Makers, in clothing conservation, and to the necessity of gathering more material on the subject of clothing. Mrs. Woolman also spoke of the need of conserving wool, and gave as one of the reasons why we get such conflicting statements in regard to

this the comparison in statements between unwashed and washed wool, the former weighing twice as much as the latter. She said that one reason for the shortage is that a soldier will need twelve times as much wool for his clothing as if he were a civilian, and she showed from figures that there is simply not enough wool in the world to meet our needs. Combinations of wool with other goods are often perfectly legitimate.

Miss Berry presented an admirable statement of the Smith-Hughes Act for vocational training, giving an historical review of the rise of home economics to a place of recognized importance since women went out into the vocational world, with the different effect in the East and West on the development in home economics training. She also contrasted the development of different branches of vocational education with that of home economics in the regular schools.

The meeting on Saturday morning was called to order by Miss MacKay with the appointment of a Committee on Resolutions, Miss Helen Louise Johnson, Chairman. Miss Carrie Lyford of the Bureau of Education presided at the round table discussion on Home Economics in the Public Schools under War Conditions. Miss Lyford outlined the part that the home economics teachers all over the country have taken in adapting their teaching to the new conditions, and stated that this subject has been introduced in more than 1000 new places in the past year.

Miss Grace Schermerhorn, newly appointed supervisor in the New York City Schools, presented the work from the standpoint of the public school. She referred to a school child's answer to the question, "What are the members of your family doing to help in the war?" After giving the different activities of the family, and particularly the food conservation on the part of the mother, the child added, "Father does not complain." Miss Schermerhorn applied this to the attitude of many people toward home economics. She emphasized the fact that the war work in the public schools should be part of the regular work rather than an interference with it, and that the change should be in new applications rather than in essential modification of plans.

Miss Cara Harris, Supervisor of Home Economics, Shelby County, Tennessee, raised two points of especial interest,—the sympathy with which all the teachers of the schools are receiving home economics work, and the great influence that the home economics work in the school is having upon the community.

Miss Alice Johnson, supervisor in the Philadelphia schools, followed with the report of the special activities in those schools under war conditions, speaking of the plan to have each cooking center a Food Informational Center, and of the fine service for others in the sewing classes.

The last speaker of the morning was Mr. Persons, in charge Department of Civilian Relief of the Red Cross. He not only gave a large measure of inspiration, but epitomized the ideals and aims of the real service the Red Cross gives in its civilian relief in a way that showed the importance of the work as we had never realized it before. A further report of his address will be published soon in the JOURNAL.

The meeting on Saturday afternoon opened with the secretary's and the treasurer's reports and those of the various committees, including the Journal. These reports will be published in the bulletin of the Association.

The most important committee report was that of the textile committee that occupied the remainder of the session. Mrs. Martha H. French, State Normal College, Ypsilanti, and Miss Ethelwyn Miller, Iowa State College, each presented able and intensely interesting papers that gave a new insight into textile work. Discussion was only checked because the time for the close of the meeting arrived. Miss Miller's paper appears in this number of the JOURNAL and Mrs. French's will be published soon. One of the characteristics of this annual meeting was the varied interests represented. Not only teachers with perhaps a larger proportion of public school teaching than usual,

but housekeepers, editors, and magazine writers, were present and contributed to the discussion. The new officers of the Association have already been reported in the JOURNAL.

The National Education Association will hold its annual meeting in Pittsburgh, Pa., June 29 to July 6. The American Home Economics Association will conduct a section meeting on Monday, July 1.

The New York Association of Dietitians has been holding monthly meetings. At the March meeting, at Teachers' College, there was a lively discussion concerning military rank for dietitians employed by the government. The Association decided that something must be done immediately to secure this recognition of training,—especially now that the nurses of the country are trying to obtain it.

Dr. Sherman of Columbia University gave an illustrated lecture on The Present Food Problem at Home and Abroad. One important point brought out was that little rye is produced in this country and the amount of wheat saved from its use alone would not amount to much. Three-fourths of the world's corn is grown in the United States and a larger consumption of corn products is recommended.

Dr. Sherman told very vividly the terrible results of the lack of milk in Europe, the mortality of children being due to this cause, to a large extent.

Dr. Sherman showed by charts that health is better maintained by observing the rules of the Food Administration than by the average way Americans have been accustomed to consume food.

The April meeting was varied by a conservation dinner, observing all the principles laid down by the Food Administration. The meal was prepared and served by the class in dietetics of the Central Branch Y.W. C. A., under the supervision of Miss Penrose, and it demonstrated the good work that can be accomplished by applying scientific knowledge to government requests.

After the dinner Mrs. Mary S. Rose of Columbia University (Deputy Food Commissioner of New York) spoke of the work of the State in solving food problems and of the continual readjustment demanded by the food situation.

Miss Lord of Pratt Institute, showed our great duty of coöperation in the tremendous task of the National Food Administration and of the necessity of educating the people in the principles of conservation.

Miss George, Head of the Dietitian Division of the Red Cross Nursing Service, urged the need of dietitians for both foreign and home service. She also read letters from dietitians in France, showing the present lack of standardization of the work of the dietitian.

The May meeting was held in the Nurses' Home of the Post Graduate Hospital. Mr. Panchard, Comptroller of the Hotel McAlpin, Hotel Claridge, Café Savaran, and the Fifth Avenue Restaurant, spoke to the Association on "Waste of Food and Conservation." He emphasized the necessity of preparing "left-overs" in an attractive way if we are to eliminate all waste from our kitchens. He claimed that Americans do not know the art of preparing cold meats and left-over vegetables in a way that is digestible and pleasing to the eye and the palate.

The Need for Nurses. The United States Army and Navy Nurse Corps needs 8000 additional nurses this June, and before the end of the year 25,000 more will be required to care for the inevitable casualties among our military forces. If the war should continue for several years the United States may need an army of 100,000 nurses.

There are now 65,084 nurses registered in this country. Of these the American Red Cross has equipped and sent abroad 2865 for Army and Navy service, and has enrolled approximately 19,000, while more than a thousand have been appointed as instructors in elementary hygiene and home care of the sick, and about an equal number are serving on committees as recruiting agents.

As the demand for nurses grows, the public, as well as the medical and nursing professions, is confronted with the definite responsibility for releasing as many private nurses as possible for military duty, for utilizing hospital facilities, visiting nurses, and smaller organizations where one nurse can care for several patients, for preparing, through whatever means may be afforded, to assist in all matters pertaining to public health.

More than 50,000 women have completed the Red Cross course in Home Care of the Sick, established to aid women in caring for the minor illnesses in their own homes. This helps so far as it goes, but it is of the greatest importance that able and educated young women should be urged to enter the regular training schools in order to fit themselves fully for nursing.

Home Service. The following resolution was adopted by the Home Economics Associations of Washington, Idaho, and Oregon: WHEREAS, The State Home Economics Association desires to coöperate in fullest measure with the American Red Cross in fulfilling its obligation and accepting opportunity for service for relief in families of enlisted men, be it *Resolved*, That the Association accept the invitation extended by the Red Cross to lend assistance through: First, appointing a committee which shall coöperate with the Division Director of Civilian Relief in all efforts to maintain and advance the family standard of living; second, (a) in inducing home economics leaders to assist their respective Red Cross Chapter Home Service Committee, (b) instructing volunteers in home economics principles through the medium of chapter course training for home service, (c) service as friendly visitors to the families of soldiers and sailors.

Pop Corn as a Money Raiser. A unique and most successful way of raising money for the Red Cross was conducted by the Home Economics Association of Cincinnati. Pop corn markets were held on two days; on the first day pop corn was sold in every public school in the city. For the Saturday down town drive Miss Lois E. Plimpton, President of the organization, had appointed teams for the hotels, clubs, department stores, drug stores, theaters, and movie houses. Bumper balls attractively wrapped in red, white, and blue paper were heaped high on white covered tables and disappeared as if by magic. The handsome sum of $2000 was the net result. The specific purpose of the fund is to purchase equipment for nurses of Base Hospital Unit No. 25.

Notes. A report of the annual meeting of the Utah State Federation in *The New West Magazine* has this to say of one of the leaders in home economics:

"The chief event of the convention was the inspired address of Miss Alice Ravenhill on Woman's Service to the Nation. Miss Ravenhill's message to woman is that her greatest service to the nation is the proper guidance, rearing, and educating of the childhood of the nation."

A knitting machine to knit socks for soldiers has been purchased by the Home Economics Club of the University of Missouri. The girls voted to buy a $50 liberty bond and the machine, which cost about $20. With this machine socks can be turned out at the rate of a pair every two hours instead of several days.

British conservation of kitchen waste in army camps, effected by the Government Committee on Purchase of Refuse, has grown from £7,500 for the first month adopted to £80,000 in the last month reported, and has supplied the entire soap requirement for army, navy, asylums, workhouses, and other public institutions, in addition to glycerine sufficient to propel 17,000,000 shells per annum.—*Industrial News Survey.*